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Subject: INTERIM RESULTS FOR THE 233-S PLUTONIUM CONCENTRATION FACILITY (233-S) SAMPLES – SDG 3

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August 12, 1999

WHC-9955518

Ms. J. H. Kessner, Program Manager
Analytical Services
Bechtel Hanford H9-03
Richland, Washington 99352

Dear Ms. Kessner:

INTERIM RESULTS FOR THE 233-S PLUTONIUM CONCENTRATION FACILITY (233-S) SAMPLES – SDG 3

References: (1) Letter, T. E. Logan, BHI, to J. L. Jacobsen, FDH, "Letter of Instruction for the 233-S Plutonium Concentration Facility Sample Analysis," 047467, dated November 24, 1998.

(2) HNF-SD-CD-QAPP-016, *222-S Laboratory Quality Assurance Plan*, Rev. 3C, Waste Management Hanford, Richland, Washington.

This letter presents the interim results for one sample that was received from the 233-S Facility on March 8, 1999 and the ten samples that were received on May 10, 1999. Sample B0TW23 was originally considered as part of the second sample delivery group (SDG2). However, due to problems with removing the activity from the surface of the sample, a message was received to allow this sample to be considered as part of SDG3. The other samples that are considered SDG3 are B0VF98, B0VF99, B0VFB0, B0VFB1, B0VFB2, B0VFB3, B0VFB4, B0VFB5, B0VFB6 and B0VFC2. The limited set of analyses indicated on the attached copies of the chain of custody (COC) forms were performed in accordance with Reference (1). The Interim Data Summary report is included as Attachment 1.

Reanalyses are still in progress for three samples. Samples B0VCW3 (S99M000210) and B0VFB6 (S99M000224) required reanalysis for ^{90}Sr, and sample B0TW23 (S99M000217) required reanalysis for neptunium-237. The reanalysis results will be presented in the report for SDG4.

For sample S99M000217, the actinides were analyzed by alpha energy analysis (AEA) rather than by inductively coupled plasma/mass spectrometry (ICP/MS) because of delays due to instrument problems.

Sample Appearance

B0TW23

This sample was a metal disk cut from ductwork. One side of the sample was coated with paint and the other had a rust-like coating. Since problems were encountered with high concentrations of metals dissolved from etching similar samples with a combination of hydrochloric acid (HCl) and nitric acid (HNO_3), the first attempt at etching the surface of the metal was made using 2% (v/v) HNO_3. The alpha activity on the piece of metal prior to the first etching was >700,000 counts per minute (cpm). Following the nitric acid etching there was still 550,000 cpm of alpha remaining on the surface of the metal. A total alpha/total beta (AT/TB) analysis was performed on that 50 mL of solution (S99M000082). A second etching was performed using the SW-846 acid digest procedure for metals analysis. This procedure uses a combination of HCl and HNO_3. There was 14,000 cpm of alpha activity remaining on the sample following the second etching. The remainder of sample S99M000082 was added to the solution from the second etching before it was brought to a final volume of 100 mL (S99M000217). A full set of radionuclide analyses was performed on the new solution. Although indicated as µCi/mL, the analytical results were reported per total solution volume (i.e. µCi/sample).

B0VF98

This sample was a piece of pipe that was approximately ½ inch (1.4 cm) in diameter and approximately 4 inches (11 cm) in length. The interior of the pipe was leached with 4M HNO_3. Two portions of acid were added to the pipe; 18 mL for the first day and 15 mL the second day. Each portion was allowed to stand in the pipe overnight and were combined for a final leachate volume of 33 mL. The analytical results were reported as µCi/mL of solution.

B0VF99

This sample was a piece of pipe that was approximately 1 inch (2.5 cm) in diameter and approximately 7 inches (17.9 cm) in length. The interior of the pipe was leached with 4M HNO_3. Two portions of acid were added to the pipe; 80 mL for the first day and 80 mL the second day. Each portion was allowed to stand in the pipe overnight. For this pipe, it was difficult to get a good fit for the stoppers. From the first 80 mL, only 44 mL were recovered (sample S99M000250). For the second addition, the pipe was turned over in case the other stopper had a better fit. From the second 80-mL addition, only 19 mL was recovered (sample S99M000260). Since some material was lost from each addition, the two portions were submitted as separate samples.

After the acid was removed from the pipe, the solutions were rust/brown in color with rust-like particles settled on the bottom. Therefore, prior to analysis the samples were transferred to beakers, hydrochloric acid was added and they were heated to dissolve the solids. Sample S99M000250 was diluted to a final volume of 100 mL, S99M000260 was diluted to 50 mL. The analytical results were reported as µCi/mL of solution.

B0VFB0
Sample was a piece of pipe that was approximately 1.6 inches (4.2 cm) in diameter and approximately 5 inches (13.9 cm) in length. The interior of the pipe was leached with 4M HNO_3. Two 150-mL portions of acid were added to the pipe. Each portion was allowed to stand in the pipe overnight and were combined for a final leachate volume of 300 mL. The analytical results were reported as µCi/mL of solution.

B0VCW3
This sample was a blue liquid analyzed as a direct liquid for full radionuclide analysis as requested on the chain of custody forms for B0VCW3 and B0VFB2, identified as being identical to sample B0VCW3. The results from the gamma energy analysis (GEA) are reported twice. One set of data, without standard and blank, was reported for the radscreen. Although the units are indicated as µCi/mL, the GEA radscreen results are actually µCi/sample based on a 5 mL sample size, as indicated on the Request for Sample Analysis (RSA) form submitted with the samples. All other result units are correct as reported.

B0VFB2
This is a second portion from the same sample point as sample B0VCW3. The inorganic analyses (pH, mercury (Hg), ion chromatography (IC) and inductively coupled plasma (ICP)) were performed on this sample. The result units are correct as reported.

B0VFB1
This sample was a clear liquid analyzed as a direct liquid for all radionuclide and inorganic analyses. The original analysis request on the chain of custody form was for a GEA, total alpha (AT) and total beta (TB) radscreen only. Two correspondences (first two in Attachment 2) received after the samples were delivered to the laboratory requested full protocol for all radionuclide and inorganic constituents, as stipulated in the LOI. Therefore, there are two sets of results reported for GEA, AT and TB analyses. For the full protocol analyses, the result units are correct as reported. For the "radscreen only" analyses, there are no results for standards and blanks. The result units for GEA results are µCi/sample rather than µCi/mL, as indicated in the Interim Data Summary Report. A 20-mL sample size was used for calculation based on information provided on the chain of custody.

B0VFB3
This sample was a liquid analyzed for GEA, AT and TB radscreen only. These results are presented without standard recovery or blank results. Although the units are indicated as µCi/mL, for the GEA radscreen the results are actually µCi/sample. A 20-mL sample size was used for calculation based on information provided on the chain of custody.

B0VFB4
This sample was a liquid analyzed for GEA, AT and TB radscreen only. These results are presented without standard recovery or blank results. Although the units are indicated

as µCi/mL, for the GEA radscreen the results are actually µCi/sample. A 20-mL sample size was used for calculation based on information provided on the chain of custody.

B0VFB5
This sample was a liquid analyzed for GEA, AT and TB radscreen only. These results are presented without standard recovery or blank results. Although the units are indicated as µCi/mL, for the GEA radscreen the results are actually µCi/sample. A 20-mL sample size was used for calculation based on information provided on the chain of custody.

B0VFB6
This sample was a liquid identified for GEA, AT and TB radscreen only. These results are presented without standard recovery or blank results. Although the units are indicated as µCi/mL, for the GEA radscreen the results units are µCi/sample rather than µCi/mL as indicated in the Interim Data Summary Report. A 20-mL sample size was used for calculation based on information provided on the chain of custody.

A correspondence received after the samples were delivered to the laboratory , third correspondence in Attachment 2, requested full protocol for all radionuclide and inorganic constituents. The correspondence indicated that this sample could be used to supplement the identical portion B0VFC2. Therefore, there are two sets of results reported for GEA, AT and TB analyses. For the full protocol analyses, the result units are correct as reported.

B0VFC2
This is a second portion from the same sample point as sample B0VFB6. The inorganic analyses (pH, Hg, IC and ICP) were performed on this sample. The result units are correct as reported.

Analytical Results

Holding Times

The SW-846 holding times were not met for Hg (28 days), pH (24 hours), nitrate, and nitrite (48 hours). The holding times were missed for several reasons. The request for radscreen and the internal laboratory requirement for alpha analysis prior to all other analyses caused the very short holding times to be missed. Instrument problems and delays in scheduling a vendor for instrument repair caused the Hg holding time to be missed.

Quality Control Results

All standard recoveries were acceptable in accordance with Reference (2). Low levels of contamination from fluoride (F) and strontium-90 (^{90}Sr) were detected in method blanks for the direct liquid analyses. The AT/TB method blank analyzed with the second

leachate from the pipe B0VF99 (S99M000260) had low levels of both alpha and beta activity detected. For the F, AT and TB, the level of contamination detected in the blank was much less than 5% of the sample result or "less than" result reported for the samples and was considered insignificant.

The method blank reported for the ^{90}Sr analysis indicated that a significant activity of ^{90}Sr was present. As discussed below, the blank result was reported based on the dilution factor of the first sample on the worklist (10201 in this case). Two samples on the worklist were sent out for reanalysis because the sample size used was too small and the counts of the blank were significant with respect to the count rate of the samples. The third sample, S99M000219 (B0VFB1) was analyzed undiluted, but a small sample size was used because of limited volume of that sample. The sample result for ^{90}Sr for this sample was less than the detection limit, indicating that the sample was not contaminated during the analysis. Therefore, even though the blank had a higher count rate than the sample, no reanalysis was requested for S99M000219.

Samples B0VCW3 (S99M000210) and B0VFB6 (S99M000224) will be reanalyzed for ^{90}Sr using a larger sample size and will be reported with SDG4. The results from the first analysis were 1.52e-01 µCi/mL (S99M000210) and 1.84e-04 µCi/mL (S99M000224). These results are subject to change upon reanalysis.

As previously reported (letter WMH-9953558), a significant level of beta activity was reported for the acid digest preparation blank for sample B0TW25/28 (S99M000096). The reported activity for the blank was approximately 46% of the activity reported for the sample. Although a reanalysis was requested, closer examination of the data indicated that this might not be necessary. Examination of the actual count rate of the blank versus that of the sample indicated that the blank activity was only 0.46% of the sample activity. The customary method of reporting the blank, to indicate significance with respect to the sample result, is to correct the blank result using the dilution factor associated with the first sample on the worklist. That sample had a dilution factor of 10201, where sample S99M000096 had a dilution factor of only 101. Considering the uncorrected blank activity with respect to sample S99M000096, the contamination was considered insignificant and the request for reanalysis was cancelled.

Practical Quantitation Limits (PQL)

For most analytes, the laboratory was unable to meet the practical quantitation limits (PQLs) listed in the LOI. For the GEA analytes, the presence of Cs-137 and the limited volume of sample available for analysis resulted in high detection limits. For samples submitted for radscreen only, the entire sample was used for the GEA analysis. For the separation/AEA analysis of plutonium, americium and curium, the presence of activity of one or more of the isotopes required sample dilutions that gave higher detection limits for the undetected isotopes.

For sample B0VFB1 (S99M000219), the PQLs were not met because of dilutions required due to limited sample volume to perform all of the requested analyses. For samples B0VFB2 and B0VFC2, PQLs for ICP and IC analyses were not met because of dilutions required for high concentrations of some analytes present in those samples. High concentrations of sodium or iron in the samples required dilution to prevent problems from solids in the ICP analysis. For IC analysis, high concentrations of nitrate required dilutions to prevent saturation of the column.

Attachments

Attachment 1: Interim Data Summary Report
Attachment 2: Correspondence
Attachment 3: Sample Breakdown Diagrams
Attachment 4: Chain-of-Custody and Request for Sample Analysis forms

If you have any questions, please call me at 373-4314.

Sincerely,

R. A. Esch, Project Coordinator
222-S Laboratory Analytical Production
Waste Management Laboratory

cef

Attachments (4)

INTERIM

Interim Data Summary Report
233-S

CORE NUMBER: n/a
SEGMENT #: BOTW23

SEGMENT PORTION: Coupon Acid Leachate

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000082		G	Alpha in Liquid Samples	uCi/mL	92.34	<2.18e-03	13.10	n/a	n/a	n/a	n/a	3.00e-03	8.68E-01
S99M000082		G	Beta in Liquid Samples	uCi/mL	103.5	<1.04e-02	1.530	n/a	n/a	n/a	n/a	1.20e-02	2.05E+00
S99M000217		A	Pu-239/240 by TRU-SPEC Resin	uCi/mL	101.6	<3.52e-01	12.00	n/a	n/a	n/a	n/a	7.91e-01	1.80E+00
S99M000217		A	Pu-238 by Ion Exchange	uCi/mL	n/a	<3.52e-01	<7.91e-01	n/a	n/a	n/a	n/a	7.91e-01	5.85E+00
S99M000217		A	Np237 by TTA Extraction	uCi/mL	n/a	n/a		n/a	n/a	n/a	n/a	1.00e-03	
S99M000217		A	Cobalt-60 by GEA	uCi/mL	111.0	<4.40e-05	<4.16e-05	n/a	n/a	n/a	n/a	4.16e-05	n/a
S99M000217		A	Antimony-125 by GEA	uCi/mL	n/a	<1.09e-04	<1.24e-04	n/a	n/a	n/a	n/a	1.24e-04	n/a
S99M000217		A	Cesium-134 by GEA	uCi/mL	n/a	<3.51e-05	<3.89e-05	n/a	n/a	n/a	n/a	3.89e-05	n/a
S99M000217		A	Cesium-137 by GEA	uCi/mL	103.3	<6.73e-05	2.12e-03	n/a	n/a	n/a	n/a	n/a	4.15
S99M000217		A	Europium-152 by GEA	uCi/mL	n/a	<6.94e-05	<8.77e-05	n/a	n/a	n/a	n/a	8.77e-05	n/a
S99M000217		A	Europium-154 by GEA	uCi/mL	n/a	<1.35e-04	<1.27e-04	n/a	n/a	n/a	n/a	1.27e-04	n/a
S99M000217		A	Europium-155 by GEA	uCi/mL	n/a	<8.80e-05	<1.40e-04	n/a	n/a	n/a	n/a	1.40e-04	n/a
S99M000217		A	Radium-226 by GEA	uCi/mL	n/a	<6.79e-04	<7.48e-04	n/a	n/a	n/a	n/a	7.48e-04	n/a
S99M000217		A	Actinium-228 by GEA	uCi/mL	n/a	<2.30e-04	<2.31e-04	n/a	n/a	n/a	n/a	2.31e-04	n/a
S99M000217		A	Americium-241 by GEA	uCi/mL	n/a	<2.50e-04	1.990	n/a	n/a	n/a	n/a	n/a	0.230
S99M000217		A	Am-241 by Extraction	uCi/mL	101.9	<2.46e-01	2.250	n/a	n/a	n/a	n/a	3.49e-01	3.21E+00
S99M000217		A	Cm-243/244 by Extraction	uCi/mL	n/a	<2.46e-01	<3.49e-01	n/a	n/a	n/a	n/a	3.49e-01	1.00E+02
S99M000217		A	Alpha in Liquid Samples	uCi/mL	92.00	<3.46e-03	12.30	n/a	n/a	n/a	n/a	8.00e-03	1.34E+00
S99M000217		A	Beta in Liquid Samples	uCi/mL	107.8	<2.80e-02	7.21e-01	n/a	n/a	n/a	n/a	4.10e-02	5.54E+00

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: BOVF98

SEGMENT PORTION: ACID LEACH - 33 mL

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000249			Pu-239/240 by TRU-SPEC Resin	uCi/mL	96.83	<1.98e-02	1.090	n/a	n/a	n/a	n/a	5.40e-02	1.60E+00
S99M000249			Pu-238 by Ion Exchange	uCi/mL	n/a	<1.98e-02	<5.41e-02	n/a	n/a	n/a	n/a	5.40e-02	4.44E+00
S99M000249			Np237 by TTA Extraction	uCi/mL	85.28	<4.86e-05	<2.38e-05	n/a	n/a	n/a	n/a	4.96e-05	3.88E+02
S99M000249			Cobalt-60 by GEA	uCi/mL	110.2	<1.73e-05	<1.77e-05	n/a	n/a	n/a	n/a	1.77e-05	n/a
S99M000249			Antimony-125 by GEA	uCi/mL	n/a	<4.69e-05	<4.88e-05	n/a	n/a	n/a	n/a	4.88e-05	n/a
S99M000249			Cesium-134 by GEA	uCi/mL	n/a	<1.61e-05	<1.68e-05	n/a	n/a	n/a	n/a	1.68e-05	n/a
S99M000249			Cesium-137 by GEA	uCi/mL	101.2	<2.53e-05	<2.18e-05	n/a	n/a	n/a	n/a	2.18e-05	n/a
S99M000249			Europium-152 by GEA	uCi/mL	n/a	<3.25e-05	<3.68e-05	n/a	n/a	n/a	n/a	3.68e-05	n/a
S99M000249			Europium-154 by GEA	uCi/mL	n/a	<5.48e-05	<4.98e-05	n/a	n/a	n/a	n/a	4.98e-05	n/a
S99M000249			Europium-155 by GEA	uCi/mL	n/a	<4.03e-05	<5.04e-05	n/a	n/a	n/a	n/a	5.04e-05	n/a
S99M000249			Radium-226 by GEA	uCi/mL	n/a	<3.02e-04	<3.18e-04	n/a	n/a	n/a	n/a	3.18e-04	n/a
S99M000249			Actinium-228 by GEA	uCi/mL	n/a	<8.37e-05	<7.72e-05	n/a	n/a	n/a	n/a	7.72e-05	n/a
S99M000249			Americium-241 by GEA	uCi/mL	n/a	<9.41e-05	2.12e-01	n/a	n/a	n/a	n/a	n/a	0.650
S99M000249			Am-241 by Extraction	uCi/mL	94.39	<2.02e-02	2.54e-01	n/a	n/a	n/a	n/a	5.30e-02	3.52E+00
S99M000249			Cm-243/244 by Extraction	uCi/mL	n/a	<2.02e-02	<5.30e-02	n/a	n/a	n/a	n/a	5.30e-02	1.00E+02
S99M000249			Alpha in Liquid Samples	uCi/mL	96.00	<4.55e-07	1.220	n/a	n/a	n/a	n/a	1.59e-04	6.01E-01
S99M000249			Beta in Liquid Samples	uCi/mL	108.3	<2.79e-06	7.43e-02	n/a	n/a	n/a	n/a	7.08e-04	2.04E+00

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: BOVF99

SEGMENT PORTION: ACID LEACH - 100 mL

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000250			Pu-239/240 by TRU-SPEC Resin	uCi/mL	96.83	<1.98e-02	6.38e-03	n/a	n/a	n/a	n/a	2.88e-04	1.49E+00
S99M000250			Pu-238 by Ion Exchange	uCi/mL	n/a	<1.98e-02	<2.88e-04	n/a	n/a	n/a	n/a	2.88e-04	4.18E+00
S99M000250			Np237 by TTA Extraction	uCi/mL	85.28	<4.86e-05	<2.38e-05	n/a	n/a	n/a	n/a	4.96e-05	3.52E+02
S99M000250			Cobalt-60 by GEA	uCi/mL	110.2	<1.73e-05	<1.92e-05	n/a	n/a	n/a	n/a	1.92e-05	n/a
S99M000250			Antimony-125 by GEA	uCi/mL	n/a	<4.69e-05	<4.59e-05	n/a	n/a	n/a	n/a	4.59e-05	n/a
S99M000250			Cesium-134 by GEA	uCi/mL	n/a	<1.61e-05	<1.76e-05	n/a	n/a	n/a	n/a	1.76e-05	n/a
S99M000250			Cesium-137 by GEA	uCi/mL	101.2	<2.53e-05	<2.77e-05	n/a	n/a	n/a	n/a	2.77e-05	n/a
S99M000250			Europium-152 by GEA	uCi/mL	n/a	<3.25e-05	<3.20e-05	n/a	n/a	n/a	n/a	3.20e-05	n/a
S99M000250			Europium-154 by GEA	uCi/mL	n/a	<5.48e-05	<5.54e-05	n/a	n/a	n/a	n/a	5.54e-05	n/a
S99M000250			Europium-155 by GEA	uCi/mL	n/a	<4.03e-05	<3.81e-05	n/a	n/a	n/a	n/a	3.81e-05	n/a
S99M000250			Radium-226 by GEA	uCi/mL	n/a	<3.02e-04	<2.80e-04	n/a	n/a	n/a	n/a	2.80e-04	n/a
S99M000250			Actinium-228 by GEA	uCi/mL	n/a	<8.37e-05	<8.89e-05	n/a	n/a	n/a	n/a	8.89e-05	n/a
S99M000250			Americium-241 by GEA	uCi/mL	n/a	<9.41e-05	2.74e-03	n/a	n/a	n/a	n/a	n/a	6.98
S99M000250			Am-241 by Extraction	uCi/mL	94.39	<2.02e-02	2.44e-03	n/a	n/a	n/a	n/a	1.91e-04	2.21E+00
S99M000250			Cm-243/244 by Extraction	uCi/mL	n/a	<2.02e-02	<1.91e-04	n/a	n/a	n/a	n/a	1.91e-04	1.00E+02
S99M000250			Alpha in Liquid Samples	uCi/mL	96.00	<4.55e-07	8.74e-03	n/a	n/a	n/a	n/a	7.88e-07	5.05E-01
S99M000250			Beta in Liquid Samples	uCi/mL	108.3	<2.79e-06	6.45e-04	n/a	n/a	n/a	n/a	3.51e-06	1.49E+00

ACID LEACH - 50 mL: ACID LEACH - 50 mL

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000260			Pu-239/240 by TRU-SPEC Resin	uCi/mL	96.83	<1.98e-02	4.32e-03	n/a	n/a	n/a	n/a	1.81e-04	1.41E+00
S99M000260			Pu-238 by Ion Exchange	uCi/mL	n/a	<1.98e-02	<1.81e-04	n/a	n/a	n/a	n/a	1.81e-04	3.44E+00
S99M000260			Np237 by TTA Extraction	uCi/mL	85.28	<4.86e-05	<2.76e-05	n/a	n/a	n/a	n/a	4.96e-05	5.00E+02
S99M000260			Cobalt-60 by GEA	uCi/mL	110.2	<1.73e-05	<1.82e-05	n/a	n/a	n/a	n/a	1.82e-05	n/a
S99M000260			Antimony-125 by GEA	uCi/mL	n/a	<4.69e-05	<4.73e-05	n/a	n/a	n/a	n/a	4.73e-05	n/a
S99M000260			Cesium-134 by GEA	uCi/mL	n/a	<1.61e-05	<1.70e-05	n/a	n/a	n/a	n/a	1.70e-05	n/a
S99M000260			Cesium-137 by GEA	uCi/mL	101.2	<2.53e-05	<3.91e-05	n/a	n/a	n/a	n/a	3.91e-05	n/a
S99M000260			Europium-152 by GEA	uCi/mL	n/a	<3.25e-05	<3.35e-05	n/a	n/a	n/a	n/a	3.35e-05	n/a
S99M000260			Europium-154 by GEA	uCi/mL	n/a	<5.48e-05	<6.13e-05	n/a	n/a	n/a	n/a	6.13e-05	n/a
S99M000260			Europium-155 by GEA	uCi/mL	n/a	<4.03e-05	<3.98e-05	n/a	n/a	n/a	n/a	3.98e-05	n/a
S99M000260			Radium-226 by GEA	uCi/mL	n/a	<3.02e-04	<2.99e-04	n/a	n/a	n/a	n/a	2.99e-04	n/a
S99M000260			Actinium-228 by GEA	uCi/mL	n/a	<8.37e-05	<8.88e-05	n/a	n/a	n/a	n/a	8.88e-05	n/a
S99M000260			Americium-241 by GEA	uCi/mL	n/a	<9.41e-05	1.32e-03	n/a	n/a	n/a	n/a	n/a	12.2
S99M000260			Am-241 by Extraction	uCi/mL	94.39	<2.02e-02	9.55e-04	n/a	n/a	n/a	n/a	8.95e-05	2.39E+00
S99M000260			Cm-243/244 by Extraction	uCi/mL	n/a	<2.02e-02	<8.95e-05	n/a	n/a	n/a	n/a	8.95e-05	1.00E+02
S99M000260			Alpha in Liquid Samples	uCi/mL	98.80	7.24e-07	5.28e-03	n/a	n/a	n/a	n/a	9.32e-07	6.45E-01
S99M000260			Beta in Liquid Samples	uCi/mL	108.7	2.06e-06	3.36e-04	n/a	n/a	n/a	n/a	3.55e-06	2.10E+00

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: BOVFB0

SEGMENT PORTION: ACID LEACH - 300 mL

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000251			Pu-239/240 by TRU-SPEC Resin	uCi/mL	96.83	<1.98e-02	2.07e-03	n/a	n/a	n/a	n/a	1.40e-04	1.84E+00
S99M000251			Pu-238 by Ion Exchange	uCi/mL	n/a	<1.98e-02	1.94e-04	n/a	n/a	n/a	n/a	1.40e-04	4.51E+00
S99M000251			Np237 by TTA Extraction	uCi/mL	85.28	<4.86e-05	<2.38e-05	n/a	n/a	n/a	n/a	4.96e-05	5.00E+02
S99M000251			Cobalt-60 by GEA	uCi/mL	110.2	<1.73e-05	<1.76e-05	n/a	n/a	n/a	n/a	1.76e-05	n/a
S99M000251			Antimony-125 by GEA	uCi/mL	n/a	<4.69e-05	<4.55e-05	n/a	n/a	n/a	n/a	4.55e-05	n/a
S99M000251			Cesium-134 by GEA	uCi/mL	n/a	<1.61e-05	<1.70e-05	n/a	n/a	n/a	n/a	1.70e-05	n/a
S99M000251			Cesium-137 by GEA	uCi/mL	101.2	<2.53e-05	<4.08e-05	n/a	n/a	n/a	n/a	4.08e-05	n/a
S99M000251			Europium-152 by GEA	uCi/mL	n/a	<3.25e-05	<3.33e-05	n/a	n/a	n/a	n/a	3.33e-05	n/a
S99M000251			Europium-154 by GEA	uCi/mL	n/a	<5.48e-05	<4.72e-05	n/a	n/a	n/a	n/a	4.72e-05	n/a
S99M000251			Europium-155 by GEA	uCi/mL	n/a	<4.03e-05	<4.30e-05	n/a	n/a	n/a	n/a	4.30e-05	n/a
S99M000251			Radium-226 by GEA	uCi/mL	n/a	<3.02e-04	<2.97e-04	n/a	n/a	n/a	n/a	2.97e-04	n/a
S99M000251			Actinium-228 by GEA	uCi/mL	n/a	<8.37e-05	<8.60e-05	n/a	n/a	n/a	n/a	8.60e-05	n/a
S99M000251			Americium-241 by GEA	uCi/mL	n/a	<9.41e-05	8.47e-04	n/a	n/a	n/a	n/a	n/a	15.6
S99M000251			Am-241 by Extraction	uCi/mL	94.39	<2.02e-02	8.15e-04	n/a	n/a	n/a	n/a	1.13e-04	2.97E+00
S99M000251			Cm-243/244 by Extraction	uCi/mL	n/a	<2.02e-02	<1.13e-04	n/a	n/a	n/a	n/a	1.13e-04	1.00E+02
S99M000251			Alpha in Liquid Samples	uCi/mL	96.00	<4.55e-07	2.64e-03	n/a	n/a	n/a	n/a	7.88e-07	9.02E-01
S99M000251			Beta in Liquid Samples	uCi/mL	108.3	<2.79e-06	1.88e-04	n/a	n/a	n/a	n/a	3.51e-06	2.89E+00

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: BOVCW3

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000210			Strontium-89/90 High Level	uCi/mL	n/a	n/a		n/a	n/a	n/a	n/a	7.00e-02	
S99M000210			Pu-239/240 by TRU-SPEC Resin	uCi/mL	103.2	<7.240	3.30e+02	n/a	n/a	n/a	n/a	18.60	1.90E+00
S99M000210			Pu-238 by Ion Exchange	uCi/mL	n/a	<7.240	< 18.60	n/a	n/a	n/a	n/a	18.60	6.00E+00
S99M000210			Np237 by TTA Extraction	uCi/mL	85.28	<4.86e-05	6.87e-03	n/a	n/a	n/a	n/a	4.96e-05	2.05E+00
S99M000210			Cobalt-60 by GEA	uCi/mL	110.2	<1.73e-05	<6.19e-05	n/a	n/a	n/a	n/a	6.19e-05	n/a
S99M000210			Antimony-125 by GEA	uCi/mL	n/a	<4.69e-05	<2.75e-04	n/a	n/a	n/a	n/a	2.75e-04	n/a
S99M000210			Cesium-134 by GEA	uCi/mL	n/a	<1.61e-05	<6.59e-05	n/a	n/a	n/a	n/a	6.59e-05	n/a
S99M000210			Cesium-137 by GEA	uCi/mL	101.2	<2.53e-05	3.35e-04	n/a	n/a	n/a	n/a	n/a	33.8
S99M000210			Europium-152 by GEA	uCi/mL	n/a	<3.25e-05	<7.58e-04	n/a	n/a	n/a	n/a	7.58e-04	n/a
S99M000210			Europium-154 by GEA	uCi/mL	n/a	<5.48e-05	<1.84e-04	n/a	n/a	n/a	n/a	1.84e-04	n/a
S99M000210			Europium-155 by GEA	uCi/mL	n/a	<4.03e-05	<2.36e-03	n/a	n/a	n/a	n/a	2.00e-03	n/a
S99M000210			Radium-226 by GEA	uCi/mL	n/a	<3.02e-04	<2.82e-03	n/a	n/a	n/a	n/a	3.00e-03	n/a
S99M000210			Actinium-228 by GEA	uCi/mL	n/a	<8.37e-05	<3.19e-04	n/a	n/a	n/a	n/a	3.19e-04	n/a
S99M000210			Americium-241 by GEA	uCi/mL	n/a	<9.41e-05	61.80	n/a	n/a	n/a	n/a	n/a	0.0700
S99M000210			Cobalt-60 by GEA	uCi/mL	n/a	n/a	<2.14e-04	n/a	n/a	n/a	n/a	2.14e-04	n/a
S99M000210			Antimony-125 by GEA	uCi/mL	n/a	n/a	<1.34e-03	n/a	n/a	n/a	n/a	1.00e-03	n/a
S99M000210			Cesium-134 by GEA	uCi/mL	n/a	n/a	<2.42e-04	n/a	n/a	n/a	n/a	2.42e-04	n/a
S99M000210			Cesium-137 by GEA	uCi/mL	n/a	n/a	2.33e-03	n/a	n/a	n/a	n/a	n/a	20.7
S99M000210			Europium-152 by GEA	uCi/mL	n/a	n/a	<5.39e-03	n/a	n/a	n/a	n/a	5.00e-03	n/a
S99M000210			Europium-154 by GEA	uCi/mL	n/a	n/a	<7.44e-04	n/a	n/a	n/a	n/a	7.44e-04	n/a
S99M000210			Europium-155 by GEA	uCi/mL	n/a	n/a	<1.68e-02	n/a	n/a	n/a	n/a	1.70e-02	n/a
S99M000210			Radium-226 by GEA	uCi/mL	n/a	n/a	<1.59e-02	n/a	n/a	n/a	n/a	1.60e-02	n/a
S99M000210			Actinium-228 by GEA	uCi/mL	n/a	n/a	<1.03e-03	n/a	n/a	n/a	n/a	1.00e-03	n/a
S99M000210			Americium-241 by GEA	uCi/mL	n/a	n/a	4.08e+02	n/a	n/a	n/a	n/a	n/a	0.0600
S99M000210			Am-241 by Extraction	uCi/mL	89.16	<6.760	68.30	n/a	n/a	n/a	n/a	11.30	2.91E+00
S99M000210			Cm-243/244 by Extraction	uCi/mL	n/a	<6.760	< 11.30	n/a	n/a	n/a	n/a	11.30	1.00E+02
S99M000210			Alpha in Liquid Samples	uCi/mL	92.83	<3.98e-02	3.61e+02	n/a	n/a	n/a	n/a	8.80e-02	7.83E-01
S99M000210			Beta in Liquid Samples	uCi/mL	102.5	<1.57e-01	19.40	n/a	n/a	n/a	n/a	2.59e-01	2.77E+00

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: BOVFB2

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000220			Mercury by CVAA (PE) with FIAS	ug/mL	94.88	<7.00e-05	3.81e-01	n/a	n/a	n/a	n/a	1.00e-03	n/a
S99M000220			pH Direct	pH	n/a	n/a	<0.5	n/a	n/a	n/a	n/a	1.00e-02	n/a
S99M000220		D	Silver-ICP-Acid Dil.	ug/mL	98.00	<1.00e-02	< 1.010	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Aluminium-ICP-Acid Dil.	ug/mL	98.60	<5.00e-02	2.25e+03	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Arsenic-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	< 10.10	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-02	< 5.050	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Barium-ICP-Acid Dil.	ug/mL	97.00	<5.00e-02	< 5.050	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Beryllium-ICP-Acid Dil.	ug/mL	99.40	<5.00e-03	<5.05e-01	n/a	n/a	n/a	n/a	5.05e-01	n/a
S99M000220		D	Bismuth-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	27.10	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Calcium-ICP-Acid Dil.	ug/mL	102.0	<1.00e-01	95.50	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Cadmium-ICP-Acid Dil.	ug/mL	101.2	<5.00e-03	<5.05e-01	n/a	n/a	n/a	n/a	5.05e-01	n/a
S99M000220		D	Cerium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 10.10	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Cobalt-ICP-Acid Dil.	ug/mL	99.20	<2.00e-02	22.10	n/a	n/a	n/a	n/a	2.020	n/a
S99M000220		D	Chromium-ICP-Acid Dil.	ug/mL	99.40	<1.00e-02	6.76e+03	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Copper-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	4.88e+02	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Iron-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	1.82e+04	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-01	< 50.50	n/a	n/a	n/a	n/a	50.50	n/a
S99M000220		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.8	<5.00e-02	< 5.050	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Lithium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	< 1.010	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	49.00	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Manganese-ICP-Acid Dil.	ug/mL	95.80	<1.00e-02	2.44e+02	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Molybdenum-ICP-Acid Dil.	ug/mL	100.4	<5.00e-02	39.60	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Sodium-ICP-Acid Dil.	ug/mL	102.2	<1.00e-01	3.67e+03	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Neodymium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	< 10.10	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Nickel-ICP-Acid Dil.	ug/mL	98.80	<2.00e-02	2.06e+03	n/a	n/a	n/a	n/a	2.020	n/a
S99M000220		D	Phosphorus-ICP-Acid Dil.	ug/mL	100.6	<2.00e-01	< 20.20	n/a	n/a	n/a	n/a	20.20	n/a
S99M000220		D	Lead-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	< 10.10	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Sulfur-ICP-Acid Dil.	ug/mL	100.0	<1.00e-01	5.81e+03	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Antimony-ICP-Acid Dil.	ug/mL	100.2	<6.00e-02	22.30	n/a	n/a	n/a	n/a	6.060	n/a
S99M000220		D	Selenium-ICP-Acid Dil.	ug/mL	98.40	<1.00e-01	< 10.10	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Silicon-ICP-Acid Dil.	ug/mL	103.2	<5.00e-02	53.20	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Samarium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	< 10.10	n/a	n/a	n/a	n/a	10.10	n/a
S99M000220		D	Strontium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	< 1.010	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Titanium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-02	10.40	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Thallium-ICP-Acid Dil.	ug/mL	97.40	<2.00e-01	< 20.20	n/a	n/a	n/a	n/a	20.20	n/a
S99M000220		D	Uranium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-01	1.70e+02	n/a	n/a	n/a	n/a	50.50	n/a
S99M000220		D	Vanadium-ICP-Acid Dil.	ug/mL	99.80	<5.00e-02	30.70	n/a	n/a	n/a	n/a	5.050	n/a
S99M000220		D	Zinc-ICP-Acid Dil.	ug/mL	100.0	<1.00e-02	5.76e+02	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220		D	Zirconium-ICP-Acid Dil.	ug/mL	96.60	<1.00e-02	< 1.010	n/a	n/a	n/a	n/a	1.010	n/a
S99M000220			Fluoride-IC-Dionex 4000/4500	ug/mL	111.3	1.50e-02	62.61	n/a	n/a	n/a	n/a	25.45	n/a
S99M000220			Chloride-IC-Dionex 4000/4500	ug/mL	108.3	<1.70e-02	< 36.06	n/a	n/a	n/a	n/a	36.06	n/a
S99M000220			Nitrite-IC - Dionex 4000/4500	ug/mL	106.0	<1.08e-01	9.39e+02	n/a	n/a	n/a	n/a	229.1	n/a
S99M000220			Nitrate by IC-Dionex 4000/4500	ug/mL	94.18	<1.39e-01	2.18e+05	n/a	n/a	n/a	n/a	1.42e+03	n/a
S99M000220			Phosphate-IC-Dionex 4000/4500	ug/mL	105.3	<1.20e-01	<2.54e+02	n/a	n/a	n/a	n/a	254.5	n/a

INTERIM

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000220			Sulfate by IC-Dionex 4000/4500	ug/mL	107.9	<1.38e-01	1.54e+04	n/a	n/a	n/a	n/a	292.7	n/a
S99M000220			Oxalate-IC-Dionex 4000/450	ug/mL	108.6	<1.05e-01	<2.23e+02	n/a	n/a	n/a	n/a	222.7	n/a

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: BOVFB1

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000219			Mercury by CVAA (PE) with FIAS	ug/mL	98.04	<7.00e-05	<1.4e-3	n/a	n/a	n/a	n/a	1.00e-03	n/a
S99M000219			pH Direct	pH	n/a	n/a	<0.5	n/a	n/a	n/a	n/a	1.00e-02	n/a
S99M000219			Strontium-89/90 High Level	uCi/mL	99.88	3.50e-02	<1.59e-06	n/a	n/a	n/a	n/a	3.28e-06	2.64E+02
S99M000219			Pu-239/240 by TRU-SPEC Resin	uCi/mL	101.6	<7.320	2.92e-04	n/a	n/a	n/a	n/a	1.28e-05	1.47E+00
S99M000219			Pu-238 by Ion Exchange	uCi/mL	n/a	<7.320	<1.28e-05	n/a	n/a	n/a	n/a	1.28e-05	4.33E+00
S99M000219			Np237 by TTA Extraction	uCi/mL	85.28	<4.86e-05	<2.38e-05	n/a	n/a	n/a	n/a	4.96e-05	2.97E+02
S99M000219		D	Silver-ICP-Acid Dil.	ug/mL	98.00	<1.00e-02	<2.00e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Aluminium-ICP-Acid Dil.	ug/mL	98.60	<5.00e-02	65.50	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Arsenic-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-02	2.390	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Barium-ICP-Acid Dil.	ug/mL	97.00	<5.00e-02	1.470	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Beryllium-ICP-Acid Dil.	ug/mL	99.40	<5.00e-03	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S99M000219		D	Bismuth-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Calcium-ICP-Acid Dil.	ug/mL	102.0	<1.00e-01	22.40	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Cadmium-ICP-Acid Dil.	ug/mL	101.2	<5.00e-03	<1.00e-02	n/a	n/a	n/a	n/a	1.00e-02	n/a
S99M000219		D	Cerium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Cobalt-ICP-Acid Dil.	ug/mL	99.20	<2.00e-02	1.110	n/a	n/a	n/a	n/a	4.00e-02	n/a
S99M000219		D	Chromium-ICP-Acid Dil.	ug/mL	99.40	<1.00e-02	45.80	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Copper-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	7.60e-01	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Iron-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	2.86e+02	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-01	1.360	n/a	n/a	n/a	n/a	1.000	n/a
S99M000219		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.8	<5.00e-02	<1.00e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Lithium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	<2.00e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	2.250	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Manganese-ICP-Acid Dil.	ug/mL	95.80	<1.00e-02	5.200	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Molybdenum-ICP-Acid Dil.	ug/mL	100.4	<5.00e-02	2.76e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Sodium-ICP-Acid Dil.	ug/mL	102.2	<1.00e-01	4.140	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Neodymium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Nickel-ICP-Acid Dil.	ug/mL	98.80	<2.00e-02	56.30	n/a	n/a	n/a	n/a	4.00e-02	n/a
S99M000219		D	Phosphorus-ICP-Acid Dil.	ug/mL	100.6	<2.00e-01	5.19e-01	n/a	n/a	n/a	n/a	4.00e-01	n/a
S99M000219		D	Lead-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	2.22e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Sulfur-ICP-Acid Dil.	ug/mL	100.0	<1.00e-01	3.740	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Antimony-ICP-Acid Dil.	ug/mL	100.2	<6.00e-02	2.09e-01	n/a	n/a	n/a	n/a	1.20e-01	n/a
S99M000219		D	Selenium-ICP-Acid Dil.	ug/mL	98.40	<1.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Silicon-ICP-Acid Dil.	ug/mL	103.2	<5.00e-02	49.00	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Samarium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	<2.00e-01	n/a	n/a	n/a	n/a	2.00e-01	n/a
S99M000219		D	Strontium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	4.62e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Titanium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-02	9.23e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Thallium-ICP-Acid Dil.	ug/mL	97.40	<2.00e-01	<4.00e-01	n/a	n/a	n/a	n/a	4.00e-01	n/a
S99M000219		D	Uranium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-01	< 1.000	n/a	n/a	n/a	n/a	1.000	n/a
S99M000219		D	Vanadium-ICP-Acid Dil.	ug/mL	99.80	<5.00e-02	1.21e-01	n/a	n/a	n/a	n/a	1.00e-01	n/a
S99M000219		D	Zinc-ICP-Acid Dil.	ug/mL	100.0	<1.00e-02	6.630	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219		D	Zirconium-ICP-Acid Dil.	ug/mL	96.60	<1.00e-02	2.32e-02	n/a	n/a	n/a	n/a	2.00e-02	n/a
S99M000219			Fluoride-IC-Dionex 4000/4500	ug/mL	111.3	1.50e-02	< 13.33	n/a	n/a	n/a	n/a	13.33	n/a

INTERIM

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000219			Chloride-IC-Dionex 4000/4500	ug/mL	108.3	<1.70e-02	< 18.89	n/a	n/a	n/a	n/a	18.89	n/a
S99M000219			Nitrite-IC - Dionex 4000/4500	ug/mL	106.0	<1.08e-01	<1.20e+02	n/a	n/a	n/a	n/a	120.0	n/a
S99M000219			Nitrate by IC-Dionex 4000/4500	ug/mL	101.0	<1.39e-01	3.31e+04	n/a	n/a	n/a	n/a	154.4	n/a
S99M000219			Phosphate-IC-Dionex 4000/4500	ug/mL	105.3	<1.20e-01	<1.33e+02	n/a	n/a	n/a	n/a	133.3	n/a
S99M000219			Sulfate by IC-Dionex 4000/4500	ug/mL	107.9	<1.38e-01	<1.53e+02	n/a	n/a	n/a	n/a	153.3	n/a
S99M000219			Oxalate-IC-Dionex 4000/450	ug/mL	108.6	<1.05e-01	<1.17e+02	n/a	n/a	n/a	n/a	116.7	n/a
S99M000219			Cobalt-60 by GEA	uCi/mL	110.2	<1.73e-05	<2.16e-05	n/a	n/a	n/a	n/a	2.16e-05	n/a
S99M000219			Antimony-125 by GEA	uCi/mL	n/a	<4.69e-05	<4.89e-05	n/a	n/a	n/a	n/a	4.89e-05	n/a
S99M000219			Cesium-134 by GEA	uCi/mL	n/a	<1.61e-05	<1.59e-05	n/a	n/a	n/a	n/a	1.59e-05	n/a
S99M000219			Cesium-137 by GEA	uCi/mL	101.2	<2.53e-05	<4.04e-05	n/a	n/a	n/a	n/a	4.04e-05	n/a
S99M000219			Europium-152 by GEA	uCi/mL	n/a	<3.25e-05	<3.43e-05	n/a	n/a	n/a	n/a	3.43e-05	n/a
S99M000219			Europium-154 by GEA	uCi/mL	n/a	<5.48e-05	<5.33e-05	n/a	n/a	n/a	n/a	5.33e-05	n/a
S99M000219			Europium-155 by GEA	uCi/mL	n/a	<4.03e-05	<3.94e-05	n/a	n/a	n/a	n/a	3.94e-05	n/a
S99M000219			Radium-226 by GEA	uCi/mL	n/a	<3.02e-04	<2.86e-04	n/a	n/a	n/a	n/a	2.86e-04	n/a
S99M000219			Actinium-228 by GEA	uCi/mL	n/a	<8.37e-05	<9.17e-05	n/a	n/a	n/a	n/a	9.17e-05	n/a
S99M000219			Americium-241 by GEA	uCi/mL	n/a	<9.41e-05	<1.01e-04	n/a	n/a	n/a	n/a	1.01e-04	n/a
S99M000219			Cobalt-60 by GEA	uCi/mL	n/a	n/a	<1.45e-05	n/a	n/a	n/a	n/a	1.45e-05	n/a
S99M000219			Antimony-125 by GEA	uCi/mL	n/a	n/a	<5.44e-05	n/a	n/a	n/a	n/a	5.44e-05	n/a
S99M000219			Cesium-134 by GEA	uCi/mL	n/a	n/a	<1.47e-05	n/a	n/a	n/a	n/a	1.47e-05	n/a
S99M000219			Cesium-137 by GEA	uCi/mL	n/a	n/a	1.39e-03	n/a	n/a	n/a	n/a	n/a	3.25
S99M000219			Europium-152 by GEA	uCi/mL	n/a	n/a	<3.92e-05	n/a	n/a	n/a	n/a	3.92e-05	n/a
S99M000219			Europium-154 by GEA	uCi/mL	n/a	n/a	<4.43e-05	n/a	n/a	n/a	n/a	4.43e-05	n/a
S99M000219			Europium-155 by GEA	uCi/mL	n/a	n/a	<5.25e-05	n/a	n/a	n/a	n/a	5.25e-05	n/a
S99M000219			Radium-226 by GEA	uCi/mL	n/a	n/a	<3.61e-04	n/a	n/a	n/a	n/a	3.61e-04	n/a
S99M000219			Actinium-228 by GEA	uCi/mL	n/a	n/a	<7.79e-05	n/a	n/a	n/a	n/a	7.79e-05	n/a
S99M000219			Americium-241 by GEA	uCi/mL	n/a	n/a	1.88e-02	n/a	n/a	n/a	n/a	n/a	2.88
S99M000219			Beta in Liquid Samples	uCi/mL	108.3	<2.79e-06	2.21e-05	n/a	n/a	n/a	n/a	3.51e-06	1.25E+01
S99M000219			Am-241 by Extraction	uCi/mL	99.06	<6.020	4.91e-05	n/a	n/a	n/a	n/a	5.90e-06	2.61E+00
S99M000219			Cm-243/244 by Extraction	uCi/mL	n/a	<6.020	<5.90e-06	n/a	n/a	n/a	n/a	5.90e-06	1.00E+02
S99M000219			Alpha in Liquid Samples	uCi/mL	96.00	<4.55e-07	3.46e-04	n/a	n/a	n/a	n/a	7.88e-07	2.50E+00
S99M000219			Alpha in Liquid Samples	uCi/mL	n/a	n/a	3.29e-04	n/a	n/a	n/a	n/a	3.68e-05	1.83E+01
S99M000219			Beta in Liquid Samples	uCi/mL	n/a	n/a	8.01e-05	n/a	n/a	n/a	n/a	1.06e-04	1.07E+02

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: B0VFB3

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000221			Cobalt-60 by GEA	uCi/mL	n/a	n/a	<1.29e-04	n/a	n/a	n/a	n/a	1.29e-04	n/a
S99M000221			Antimony-125 by GEA	uCi/mL	n/a	n/a	<1.10e-02	n/a	n/a	n/a	n/a	1.10e-02	n/a
S99M000221			Cesium-134 by GEA	uCi/mL	n/a	n/a	<1.79e-03	n/a	n/a	n/a	n/a	2.00e-03	n/a
S99M000221			Cesium-137 by GEA	uCi/mL	n/a	n/a	13.00	n/a	n/a	n/a	n/a	n/a	0.100
S99M000221			Europium-152 by GEA	uCi/mL	n/a	n/a	<7.11e-03	n/a	n/a	n/a	n/a	7.00e-03	n/a
S99M000221			Europium-154 by GEA	uCi/mL	n/a	n/a	<4.96e-04	n/a	n/a	n/a	n/a	4.96e-04	n/a
S99M000221			Europium-155 by GEA	uCi/mL	n/a	n/a	<8.40e-03	n/a	n/a	n/a	n/a	8.00e-03	n/a
S99M000221			Radium-226 by GEA	uCi/mL	n/a	n/a	<6.89e-02	n/a	n/a	n/a	n/a	6.90e-02	n/a
S99M000221			Actinium-228 by GEA	uCi/mL	n/a	n/a	<9.89e-04	n/a	n/a	n/a	n/a	9.89e-04	n/a
S99M000221			Americium-241 by GEA	uCi/mL	n/a	n/a	1.960	n/a	n/a	n/a	n/a	n/a	1.94
S99M000221			Alpha in Liquid Samples	uCi/mL	n/a	n/a	2.97e-01	n/a	n/a	n/a	n/a	2.93e-05	5.64E-01
S99M000221			Beta in Liquid Samples	uCi/mL	n/a	n/a	6.37e-01	n/a	n/a	n/a	n/a	1.09e-04	2.99E-01

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: B0VFB4

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000222			Cobalt-60 by GEA	uCi/mL	n/a	n/a	<1.57e-04	n/a	n/a	n/a	n/a	1.57e-04	n/a
S99M000222			Antimony-125 by GEA	uCi/mL	n/a	n/a	<1.08e-02	n/a	n/a	n/a	n/a	1.10e-02	n/a
S99M000222			Cesium-134 by GEA	uCi/mL	n/a	n/a	<1.76e-03	n/a	n/a	n/a	n/a	2.00e-03	n/a
S99M000222			Cesium-137 by GEA	uCi/mL	n/a	n/a	12.30	n/a	n/a	n/a	n/a	n/a	0.100
S99M000222			Europium-152 by GEA	uCi/mL	n/a	n/a	<7.05e-03	n/a	n/a	n/a	n/a	7.00e-03	n/a
S99M000222			Europium-154 by GEA	uCi/mL	n/a	n/a	<4.49e-04	n/a	n/a	n/a	n/a	4.49e-04	n/a
S99M000222			Europium-155 by GEA	uCi/mL	n/a	n/a	<8.33e-03	n/a	n/a	n/a	n/a	8.00e-03	n/a
S99M000222			Radium-226 by GEA	uCi/mL	n/a	n/a	<6.79e-02	n/a	n/a	n/a	n/a	6.80e-02	n/a
S99M000222			Actinium-228 by GEA	uCi/mL	n/a	n/a	<9.55e-04	n/a	n/a	n/a	n/a	9.55e-04	n/a
S99M000222			Americium-241 by GEA	uCi/mL	n/a	n/a	2.160	n/a	n/a	n/a	n/a	n/a	1.75
S99M000222			Alpha in Liquid Samples	uCi/mL	n/a	n/a	4.15e-03	n/a	n/a	n/a	n/a	2.93e-05	4.79E+00
S99M000222			Beta in Liquid Samples	uCi/mL	n/a	n/a	6.06e-01	n/a	n/a	n/a	n/a	1.09e-04	3.08E-01

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: B0VFB5

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000223			Cobalt-60 by GEA	uCi/mL	n/a	n/a	4.09e-04	n/a	n/a	n/a	n/a	n/a	30.5
S99M000223			Antimony-125 by GEA	uCi/mL	n/a	n/a	<1.19e-02	n/a	n/a	n/a	n/a	1.20e-02	n/a
S99M000223			Cesium-134 by GEA	uCi/mL	n/a	n/a	<1.93e-03	n/a	n/a	n/a	n/a	2.00e-03	n/a
S99M000223			Cesium-137 by GEA	uCi/mL	n/a	n/a	15.00	n/a	n/a	n/a	n/a	n/a	0.0900
S99M000223			Europium-152 by GEA	uCi/mL	n/a	n/a	<7.74e-03	n/a	n/a	n/a	n/a	8.00e-03	n/a
S99M000223			Europium-154 by GEA	uCi/mL	n/a	n/a	<6.03e-04	n/a	n/a	n/a	n/a	6.03e-04	n/a
S99M000223			Europium-155 by GEA	uCi/mL	n/a	n/a	<9.17e-03	n/a	n/a	n/a	n/a	9.00e-03	n/a
S99M000223			Radium-226 by GEA	uCi/mL	n/a	n/a	<7.48e-02	n/a	n/a	n/a	n/a	7.50e-02	n/a
S99M000223			Actinium-228 by GEA	uCi/mL	n/a	n/a	<9.53e-04	n/a	n/a	n/a	n/a	9.53e-04	n/a
S99M000223			Americium-241 by GEA	uCi/mL	n/a	n/a	2.380	n/a	n/a	n/a	n/a	n/a	1.75
S99M000223			Alpha in Liquid Samples	uCi/mL	n/a	n/a	6.50e-03	n/a	n/a	n/a	n/a	2.93e-05	3.84E+00
S99M000223			Beta in Liquid Samples	uCi/mL	n/a	n/a	7.37e-01	n/a	n/a	n/a	n/a	1.09e-04	2.78E-01

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: B0VFB6

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000224			Strontium-89/90 High Level	uCi/mL	n/a	n/a		n/a	n/a	n/a	n/a	7.29e-05	
S99M000224			Pu-239/240 by TRU-SPEC Resin	uCi/mL	101.6	<7.320	3.33e-05	n/a	n/a	n/a	n/a	6.25e-06	2.52E+00
S99M000224			Pu-238 by Ion Exchange	uCi/mL	n/a	<7.320	6.25e-06	n/a	n/a	n/a	n/a	6.25e-06	5.21E+00
S99M000224			Np237 by TTA Extraction	uCi/mL	85.28	<4.86e-05	3.95e-04	n/a	n/a	n/a	n/a	4.96e-05	1.10E+01
S99M000224			Cobalt-60 by GEA	uCi/mL	110.0	<1.81e-05	<2.10e-05	n/a	n/a	n/a	n/a	2.10e-05	n/a
S99M000224			Antimony-125 by GEA	uCi/mL	n/a	<4.63e-05	<8.52e-04	n/a	n/a	n/a	n/a	8.52e-04	n/a
S99M000224			Cesium-134 by GEA	uCi/mL	n/a	<1.54e-05	<1.63e-04	n/a	n/a	n/a	n/a	1.63e-04	n/a
S99M000224			Cesium-137 by GEA	uCi/mL	103.4	<3.99e-05	5.73e-01	n/a	n/a	n/a	n/a	n/a	0.190
S99M000224			Europium-152 by GEA	uCi/mL	n/a	<3.36e-05	<4.09e-04	n/a	n/a	n/a	n/a	4.09e-04	n/a
S99M000224			Europium-154 by GEA	uCi/mL	n/a	<5.78e-05	<5.28e-05	n/a	n/a	n/a	n/a	5.28e-05	n/a
S99M000224			Europium-155 by GEA	uCi/mL	n/a	<4.03e-05	<4.77e-04	n/a	n/a	n/a	n/a	4.77e-04	n/a
S99M000224			Radium-226 by GEA	uCi/mL	n/a	<2.82e-04	<3.87e-03	n/a	n/a	n/a	n/a	4.00e-03	n/a
S99M000224			Actinium-228 by GEA	uCi/mL	n/a	<9.27e-05	<9.70e-05	n/a	n/a	n/a	n/a	9.70e-05	n/a
S99M000224			Americium-241 by GEA	uCi/mL	n/a	<9.31e-05	<1.15e-03	n/a	n/a	n/a	n/a	1.00e-03	n/a
S99M000224			Cobalt-60 by GEA	uCi/mL	n/a	n/a	<1.59e-04	n/a	n/a	n/a	n/a	1.59e-04	n/a
S99M000224			Antimony-125 by GEA	uCi/mL	n/a	n/a	<1.15e-02	n/a	n/a	n/a	n/a	1.10e-02	n/a
S99M000224			Cesium-134 by GEA	uCi/mL	n/a	n/a	<1.83e-03	n/a	n/a	n/a	n/a	2.00e-03	n/a
S99M000224			Cesium-137 by GEA	uCi/mL	n/a	n/a	14.00	n/a	n/a	n/a	n/a	n/a	0.0900
S99M000224			Europium-152 by GEA	uCi/mL	n/a	n/a	<7.47e-03	n/a	n/a	n/a	n/a	7.00e-03	n/a
S99M000224			Europium-154 by GEA	uCi/mL	n/a	n/a	<4.56e-04	n/a	n/a	n/a	n/a	4.56e-04	n/a
S99M000224			Europium-155 by GEA	uCi/mL	n/a	n/a	<8.79e-03	n/a	n/a	n/a	n/a	9.00e-03	n/a
S99M000224			Radium-226 by GEA	uCi/mL	n/a	n/a	<7.30e-02	n/a	n/a	n/a	n/a	7.30e-02	n/a
S99M000224			Actinium-228 by GEA	uCi/mL	n/a	n/a	<1.03e-03	n/a	n/a	n/a	n/a	1.00e-03	n/a
S99M000224			Americium-241 by GEA	uCi/mL	n/a	n/a	3.44e-01	n/a	n/a	n/a	n/a	n/a	6.81
S99M000224			Beta in Liquid Samples	uCi/mL	101.2	<4.30e-04	5.80e-01	n/a	n/a	n/a	n/a	1.77e-04	3.25E-01
S99M000224			Am-241 by Extraction	uCi/mL	99.06	<6.020	3.90e-06	n/a	n/a	n/a	n/a	3.50e-06	7.08E+00
S99M000224			Cm-243/244 by Extraction	uCi/mL	n/a	<6.020	<3.50e-06	n/a	n/a	n/a	n/a	3.50e-06	1.00E+02
S99M000224			Alpha in Liquid Samples	uCi/mL	92.40	<2.49e-05	2.33e-02	n/a	n/a	n/a	n/a	3.26e-05	2.04E+00
S99M000224			Alpha in Liquid Samples	uCi/mL	n/a	n/a	3.22e-03	n/a	n/a	n/a	n/a	2.93e-05	5.47E+00
S99M000224			Beta in Liquid Samples	uCi/mL	n/a	n/a	6.10e-01	n/a	n/a	n/a	n/a	1.09e-04	3.06E-01

INTERIM

Interim Data Summary Report
233S SCREEN

CORE NUMBER: n/a
SEGMENT #: BOVFC2

SEGMENT PORTION: Liquid

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000225			Mercury by CVAA (PE) with FIAS	ug/mL	98.04	<7.00e-05	2.98e-02	n/a	n/a	n/a	n/a	1.00e-03	n/a
S99M000225			pH Direct	pH	n/a	n/a	9.660	n/a	n/a	n/a	n/a	1.00e-02	n/a
S99M000225		D	Silver-ICP-Acid Dil.	ug/mL	98.00	<1.00e-02	9.04e-01	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Aluminium-ICP-Acid Dil.	ug/mL	98.60	<5.00e-02	1.280	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Arsenic-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Boron-ICP-Acid Dil.	ug/mL	102.2	<5.00e-02	1.930	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Barium-ICP-Acid Dil.	ug/mL	97.00	<5.00e-02	< 1.050	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Beryllium-ICP-Acid Dil.	ug/mL	99.40	<5.00e-03	<1.05e-01	n/a	n/a	n/a	n/a	1.05e-01	n/a
S99M000225		D	Bismuth-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Calcium-ICP-Acid Dil.	ug/mL	102.0	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Cadmium-ICP-Acid Dil.	ug/mL	101.2	<5.00e-03	<1.05e-01	n/a	n/a	n/a	n/a	1.05e-01	n/a
S99M000225		D	Cerium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Cobalt-ICP-Acid Dil.	ug/mL	99.20	<2.00e-02	<4.20e-01	n/a	n/a	n/a	n/a	4.20e-01	n/a
S99M000225		D	Chromium-ICP-Acid Dil.	ug/mL	99.40	<1.00e-02	20.00	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Copper-ICP-Acid Dil.	ug/mL	101.0	<1.00e-02	57.70	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Iron-ICP-Acid Dil.	ug/mL	100.6	<5.00e-02	1.350	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Potassium-ICP-Acid Dil.	ug/mL	104.8	<5.00e-01	1.76e+02	n/a	n/a	n/a	n/a	10.50	n/a
S99M000225		D	Lanthanum-ICP-Acid Dil.	ug/mL	100.8	<5.00e-02	< 1.050	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Lithium-ICP-Acid Dil.	ug/mL	100.8	<1.00e-02	<2.10e-01	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Magnesium-ICP-Acid Dil.	ug/mL	100.4	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Manganese-ICP-Acid Dil.	ug/mL	95.80	<1.00e-02	<2.10e-01	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Molybdenum-ICP-Acid Dil.	ug/mL	100.4	<5.00e-02	< 1.050	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Sodium-ICP-Acid Dil.	ug/mL	102.2	<1.00e-01	1.30e+04	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Neodymium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Nickel-ICP-Acid Dil.	ug/mL	98.80	<2.00e-02	4.370	n/a	n/a	n/a	n/a	4.20e-01	n/a
S99M000225		D	Phosphorus-ICP-Acid Dil.	ug/mL	100.6	<2.00e-01	1.73e+02	n/a	n/a	n/a	n/a	4.200	n/a
S99M000225		D	Lead-ICP-Acid Dil.	ug/mL	99.40	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Sulfur-ICP-Acid Dil.	ug/mL	100.0	<1.00e-01	9.62e+02	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Antimony-ICP-Acid Dil.	ug/mL	100.2	<6.00e-02	< 1.260	n/a	n/a	n/a	n/a	1.260	n/a
S99M000225		D	Selenium-ICP-Acid Dil.	ug/mL	98.40	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Silicon-ICP-Acid Dil.	ug/mL	103.2	<5.00e-02	16.00	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Samarium-ICP-Acid Dil.	ug/mL	100.6	<1.00e-01	< 2.100	n/a	n/a	n/a	n/a	2.100	n/a
S99M000225		D	Strontium-ICP-Acid Dil.	ug/mL	98.20	<1.00e-02	<2.10e-01	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Titanium-ICP-Acid Dil.	ug/mL	100.2	<1.00e-02	<2.10e-01	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Thallium-ICP-Acid Dil.	ug/mL	97.40	<2.00e-01	< 4.200	n/a	n/a	n/a	n/a	4.200	n/a
S99M000225		D	Uranium-ICP-Acid Dil.	ug/mL	102.0	<5.00e-01	20.20	n/a	n/a	n/a	n/a	10.50	n/a
S99M000225		D	Vanadium-ICP-Acid Dil.	ug/mL	99.80	<5.00e-02	< 1.050	n/a	n/a	n/a	n/a	1.050	n/a
S99M000225		D	Zinc-ICP-Acid Dil.	ug/mL	100.0	<1.00e-02	<2.10e-01	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225		D	Zirconium-ICP-Acid Dil.	ug/mL	96.60	<1.00e-02	<2.10e-01	n/a	n/a	n/a	n/a	2.10e-01	n/a
S99M000225			Fluoride-IC-Dionex 4000/4500	ug/mL	111.3	1.50e-02	71.96	n/a	n/a	n/a	n/a	13.33	n/a
S99M000225			Chloride-IC-Dionex 4000/4500	ug/mL	108.3	<1.70e-02	1.16e+02	n/a	n/a	n/a	n/a	18.89	n/a
S99M000225			Nitrite-IC - Dionex 4000/4500	ug/mL	106.0	<1.08e-01	6.09e+02	n/a	n/a	n/a	n/a	120.0	n/a
S99M000225			Nitrate by IC-Dionex 4000/4500	ug/mL	101.0	<1.39e-01	2.99e+04	n/a	n/a	n/a	n/a	154.4	n/a
S99M000225			Phosphate-IC-Dionex 4000/4500	ug/mL	105.3	<1.20e-01	5.88e+02	n/a	n/a	n/a	n/a	133.3	n/a

INTERIM

Sample#	R	A#	Analyte	Unit	Standard %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Count Err%
S99M000225			Sulfate by IC-Dionex 4000/4500	ug/mL	107.9	<1.38e-01	3.15e+03	n/a	n/a	n/a	n/a	153.3	n/a
S99M000225			Oxalate-IC-Dionex 4000/450	ug/mL	108.6	<1.05e-01	2.44e+03	n/a	n/a	n/a	n/a	116.7	n/a

INTERIM

Esch, Ruth A

From: Trent, Stephen J
Sent: Monday, May 17, 1999 4:32 PM
To: Powell, Katherine L
Cc: Esch, Ruth A
Subject: Supplementary Instructions and Clarifications

Please review the following supplementary instructions and clarifications regarding 233-S samples currently at the 222-S laboratory:

1) Sample B0TW23 - This sample (originally submitted in SDG 2) will be run in the same QC batch as the most current set of samples (SDG 3), delivered on 5/10/99.

2) Sample B0VFB1 - In addition to the rad screen analysis, this sample will be analysed for all rad constituents (full protocol). These constituents include Np-237, Am-241, Cm-243, Pu-238/239/240, and Sr-90.

3) The Chain of Custody for samples B0VFB1, B0VFB2, B0VFB3, B0VFB4,and B0VFB5 has an "Item #3" entry in the special instructions box of the chain of custody. This special instruction does not pertain to any of the samples listed on this chain of custody, and should be disregarded.

4) Enless otherwise directed, please run all actinide analyses via AEA for SDG 3 samples. Rich Weiss needs to compare the ICP-MS to AEA data from the last set of samples (SDG 2) analysed at the laboratory. In the future, BHI may request the laboratory to run ICP-MS in lieu of AEA on certain samples for actinide analyses.

If you have any questions, comments, complaints, etc, please feel free to call me on 372-9651.

Thanks

Steve Trent

Esch, Ruth A

From: Trent, Stephen J
Sent: Friday, May 21, 1999 7:34 AM
To: Esch, Ruth A; Powell, Katherine L
Subject: RE: Additional clarification of analyses for 233-S samples

Ruth:

Thanks for reading our minds; this is exactly what we wanted done. Sorry for the confusion on B0VFB1. I think the seasawing on off-site vs. on-site analysis for this sample resulted in broken communication between the sampler and myself regarding the analytes of concern. Hopefully you have enough volume to run the additional analyses...

Steve

-----Original Message-----
From: Esch, Ruth A
Sent: Thursday, May 20, 1999 6:56 PM
To: Trent, Stephen J; Powell, Katherine L
Subject: RE: Additional clarification of analyses for 233-S samples

Steve,

On B0VCW3, we ran radscreen GEA with no QC, but for the radscreen alpha/beta, I included a standard and blank. Therefore, when you requested GEA on the chain of custody for B0VFB2, I added an additional GEA test to B0VCW3 (since it is basically the same sample) with just the analytes listed in the Analytical Instructions and I will run a standard and blank with that batch.

Does that answer your question? Is that what you expected?

Ruth

-----Original Message-----
From: Trent, Stephen J
Sent: Thursday, May 20, 1999 12:24 PM
To: Powell, Katherine L
Cc: Esch, Ruth A
Subject: Additional clarification of analyses for 233-S samples
Importance: High

Kathy:

There seems to be some confusion over the requested analyses for the 233-S nitric sample (B0VFB1) that was originally destined to go off-site. The following is the list of analyses that need to be run on this sample:

GEA (w/ QC stipulated in the 233-S analytical instructions)
Gross Alpha/Gross Beta (w/ QC stipulated in the 233-S analytical instructions)
pH
ICP Metals (totals)
Hg (total)
Anions
Pu-iso
Am-iso
Np-237
Cm-243/244

Also, could you check with Ruth and make sure she is running "full QC" GEA, Gross Alpha and Gross Beta analyses for either B0VCW3 or B0VFB2 (the Blue Liquid samples). Her sample analysis diagram seems to indicate that one of these samples will have a full QC GEA, Gross alpha and gross beta analysis, but I need to make sure; there is possibility of confusion here since a GEA, Gross Alpha, and Gross Beta rad screen was originally performed on one of these samples...

Thanks

Steve

Esch, Ruth A

From: Trent, Stephen J
Sent: Wednesday, June 09, 1999 9:20 AM
To: Esch, Ruth A
Cc: Powell, Katherine L
Subject: Additional Instructions on 233-S samples

Ruth:

Sample B0VFB6 is a rad screen only sample for GEA, gross alpha, and gross beta.

Sample B0VFC2 is should be run according to the requirments in the 233-S AI for the following analyses:

GEA
Gross alpha
Gross beta
Pu-iso
Np-237
Am-241/Cm-244
Sr-90
pH
ICP metals
Hg
anions

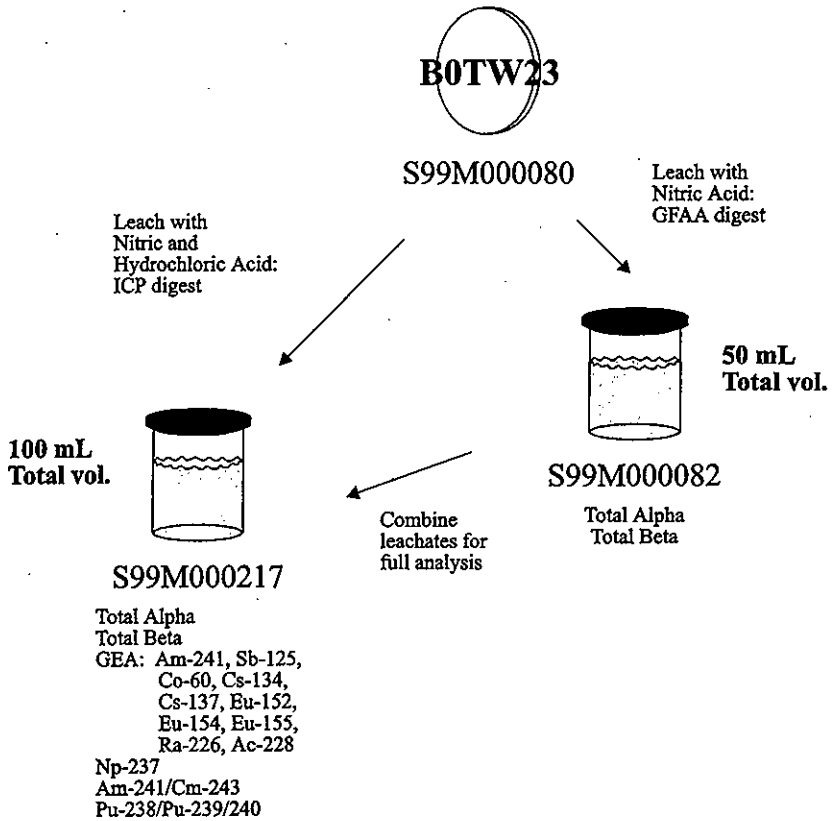
Note that sample B0VFB6 and B0VFC2 are the same material, and can be used to supplement each other as needed to meet analytical volume requirements.

Regards,

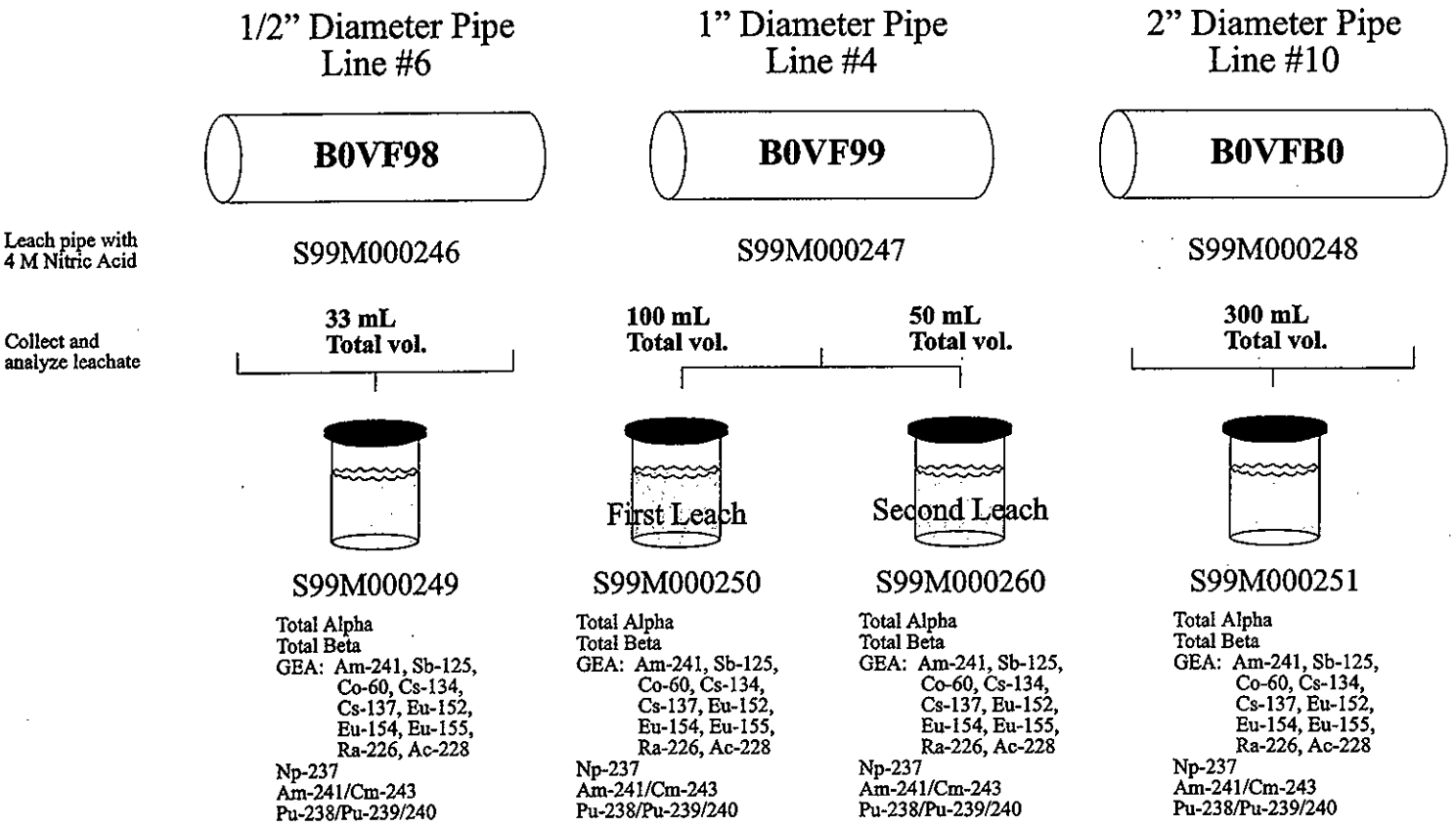
Steve

233-S Pu Concentration Facility Samples - SDG3

East Duct Coupon
B0TW23

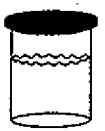


233-S Pu Concentration Facility Samples - SDG 3



233-S Pu Concentration Facility Samples - SDG 3

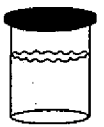
B0VCW3



S99M000210

GEA - screen
Total Alpha
Total Beta
GEA: Am-241, Sb-125, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Eu-155, Ra-226, Ac-228
Np-237
Sr-90
Am-241/Cm-243
Pu-238/Pu-239/240

B0VFB2
same as B0VCW3



S99M000220

pH
Hg
IC: anions
ICP: metals

B0VFB1

S99M000219

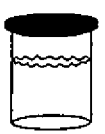
GEA - screen
Alpha/ Beta - screen
pH Hg
ICP: metals IC: anions
Total Alpha/Total Beta
GEA: Am-241, Sb-125, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Eu-155, Ra-226, Ac-228
Np-237
Sr-90
Am-241/Cm-243
Pu-238/Pu-239/240

B0VFB3

S99M000221

Alpha/Beta -screen
GEA - screen

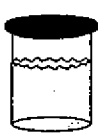
B0VFB4



S99M000222

Alpha/Beta -screen
GEA - screen

B0VFB5



S99M000223

Alpha/Beta -screen
GEA - screen

B0VFB6

S99M000224

Alpha/Beta - screen
GEA - screen
Total Alpha/Total Beta
GEA: Am-241, Sb-125, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Eu-155, Ra-226, Ac-228
Np-237
Sr-90
Am-241/Cm-243
Pu-238/Pu-239/240

B0VFC2
same as B0VFB6

S99M000225

pH
Hg
IC: anions
ICP: metals

Bechtel Hanford Inc.

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: Toby Adair	Company Contact: Dave Encke	Telephone No.: 373-3461	Project Coordinator: Steve Front
Project Designation: 233-S Liquids	Sampling Location: Neptunium transfer line L-18 XAW		SAF No.: B99-025
Ice Chest No.: ERC 97-079	Field Logbook No.: EFL 1133-7		Method of Shipment: Hand deliver
Shipped To: 222-S	Offsite Property No.		Bill of Lading/Air Bill No.
Waste Designation			COA: R233ST 2FOC

Data Turnaround: 7 days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None
Type of Container	P
No. of Container(s)	1
Volume	20 ml
SAMPLE ANALYSIS	GEA Total Alpha/ Beta

Sample No.	Matrix *	Sample Date	Sample Time	
B0VCW3	WM	4-22-99	1025	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By / Date/Time	Received By / Date/Time
Toby Adair / 4/22/99 13:15	Doug Bowers / 4-22-99/1315
Doug Bowers / 4-22-99/1332	Steve Peterson / 4-22-99 1333

SPECIAL INSTRUCTIONS

ph is < 1

Matrix *

S	Soil
SE	Sediment
SO	Solid
SL	Sludge
W	Water
O	Oil
A	Air
DS	Drum Solids
DL	Drum Liquids
T	Tissue
WI	Wipe
L	Liquid
V	Vegetation
X	Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-024-03	Page 1 of 1

Collector Doug Bowers	Company Contact Dave Encke Telephone No. 373-3461	Project Coordinator TRENT, SJ	Price Code IV/FE Data Turnaround 45 days
Project Designation 233-S Plutonium Concentration Facility Process Areas - Ot	Sampling Location 233-S 200 west	SAF No. B99-024	
Ice Chest No.	Field Logbook No. EFL 1133-7	Method of Shipment hand carry	
Shipped To 222-S Lab Operations	Offsite Property No.	Bill of Lading/Air Bill No.	
		COA R233ST 2600	

POSSIBLE SAMPLE HAZARDS/REMARKS

Bags have high smearable alpha internally.

Special Handling and/or Storage

Preservation	None										
Type of Container	Poly Bag										
No. of Container(s)	1										
Volume	2L										
SAMPLE ANALYSIS	See item (1) in Special Instructions.										

Sample No.	Matrix *	Sample Date	Sample Time										
B0VF98	Other Solid	5-6-99	1520	X			1/2"		Line #6				
B0VF99	Other Solid	5-6-99	1530	X			1"		Line #4				
B0VFB0	Other Solid	5-6-99	1540	X			2"		Line #10				

CHAIN OF POSSESSION	Sign/Print Names			
Relinquished By	Date/Time	Received By	Date/Time
Doug Bowers / Doug Bowers	5-10-99/1215	[illegible] / TAMURPHY	5/10/99 1212
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time
Relinquished By	Date/Time	Received By	Date/Time

SPECIAL INSTRUCTIONS

Item # 1 GEA, gross alpha, gross beta, isotopic Pu, Np-237, and Am-241, ~~Cm 243/244.~~ Cm243/244

~~Item # 2 ICP (TCLP), Hg (TCLP), and PCB's~~

~~Item # 3 Anions and pH~~ DB 5-5-99

~~(1) Gamma Spectroscopy (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226)~~

sample date reflects when they were picked up, by sampler D. Bowers

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-025-04	Page 1 of 2

Collector Doug Bowers	**Company Contact** Dave Encke **Telephone No.** 373-3461	**Project Coordinator** TRENT, SJ	**Price Code** IV/FE **Data Turnaround** 45 days
Project Designation 233-S Plutonium Concentration Facility Process Areas - Ot	**Sampling Location** 233-S bldg 200 west	**SAF No.** B99-025	
Ice Chest No.	**Field Logbook No.** EFL 1133-7	**Method of Shipment** Hand deliver	
Shipped To 222-S Lab Operations	**Offsite Property No.**	**Bill of Lading/Air Bill No.**	
		COA R233ST 2600	

POSSIBLE SAMPLE HAZARDS/REMARKS

corrosive

Special Handling and/or Storage

none

Preservation											
Type of Container	P	P									
No. of Container(s)	1	1									
Volume	20mL	20 ~~125mL~~ BOB 5-7-99									
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item ~~(1)~~ in Special Instructions. See item # 2 below									

Sample No.	Matrix *	Sample Date	Sample Time								
B0VFB1	Other Liquid	5-6-99	1435	X		L1-003	L3-006				
B0VFB2	Other Liquid	5-6-99	1425		X	10 ml add on to B0VCW3 previously taken 4-22-99					
B0VFB3	Other Liquid	5-6-99	1350	X		L3-003					
B0VFB4	Other Liquid	5-6-99	1415	X		L3-005					
B0VFB5	Other Liquid	5-6-99	1400	X		L3-007					

CHAIN OF POSSESSION

Sign/Print Names			
Relinquished By Doug Bowers Date/Time 5-10-99 1217	Received By [illegible] Date/Time 5/10/99 1217		
Relinquished By Date/Time	Received By Date/Time		
Relinquished By Date/Time	Received By Date/Time		
Relinquished By Date/Time	Received By Date/Time		

SPECIAL INSTRUCTIONS

** If limited sample volume is available, contact Sample Management for analyses priority. Item # 2 pH, ICP metals, Mercury, anions, isotopic Pu, Am-241, Np237, Cm-243/244, Sr-90, and GEA.

(1) Gross Alpha; Gross Beta; Gamma Spectroscopy (Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226); ~~Americium-241/Curium-244, Neptunium-237, Isotopic Plutonium, Strontium-90~~ BOB 5-7-99

#ITEM #3 pH, ICP, metals, Hg, anions, isotopic Pu, Am-241, Np237, Cm-243/244, Sr-90.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

Bechtel Hanford Inc.	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	B99-025-04	Page 2 of 2

Collector Doug Bowers	Company Contact Dave Encke	Telephone No. 373-3461	Project Coordinator TRENT, SJ
Project Designation 233-S Plutonium Concentration Facility Process Areas - Ot	Sampling Location 233-S bldg 200 west		SAF No. B99-025
Ice Chest No.	Field Logbook No. EFL 1133-7		Method of Shipment Hand deliver
Shipped To 222-S Lab Operations	Offsite Property No.		Bill of Lading/Air Bill No.

Price Code IV/FE Data Turnaround 45 days

COA R2335T2600

POSSIBLE SAMPLE HAZARDS/REMARKS

corrosive

Special Handling and/or Storage
none

Sample No.	Matrix *	Sample Date	Sample Time	Preservation	Type of Container	No. of Container(s) / Volume								
					P	P	P							
					1	1	1							
					20mL	125mL	20ml							
SAMPLE ANALYSIS					See item (1) in Special Instructions.	See item (1) in Special Instructions.	See item #3 below							
B0VFB6	Other Liquid	5-6-99	1330	X									L3-002	
B0VFC2	Other Liquid	5-6-99	1330			X		20ml add on to B0VFB6					L3-002	

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By	Doug Bowers	Date/Time 5-10-99/1215	Received By / Date/Time
Relinquished By		Date/Time	Received By / Date/Time
Relinquished By		Date/Time	Received By / Date/Time
Relinquished By		Date/Time	Received By / Date/Time

SPECIAL INSTRUCTIONS

** If limited sample volume is available, contact Sample Management for analyses priority. Item # 2 pH, ICP metals, Mercury, anions,isotopic Pu, Am-241, Np237, Cm-243/244, Sr-90, and GEA.

(1) Gross Alpha; Gross Beta; Gamma Spectroscopy {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Radium-226}; ~~Americium-241/Curium-244; Neptunium-237; Isotopic Plutonium; Strontium-90~~ DO 5-7-99

ITEM #3 pH, ICP metals, Hg, anions, isotopic Pu, Am-241, Np 237, Cm-243/244, Sr-90.

Matrix *
Soil
Water
Vapor
Other Solid
Other Liquid

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

REQUEST FOR SAMPLE ANALYSIS (RSA)

Group ID No. (For lab use only)

Sample Origin	2. Date Sampled	4. Requestor's Name	6. CACN/COA	7. Cost Center
233-S Building	4/22/99	STEVE TRENT	108798/EH00	

Customer/Project Code	3. Submitted By	5. Requestor's Phone/MSIN/FAX
BECHTEL HANFORD, INC	DOUG BOWERS	372-9651/H9-03/372-9487

Customer ID No.	9. Laboratory Sample No.	10. Volume of Sample	11. Matrix of Sample	12. Requested Analyses	13. Expected Range
ØVCW3	S99M000210	5ml	liquid	GEA, Gross α, β	
				(see chain of custody)	

. Does sample have a MSDS?

○ Yes HEHF assigned MSDS No. ____________

○ No Description of process that produced waste/sample:

Will radiochemistry results be used for unconditional release? ○ Yes ☑ No

5. Is this sample RCRA listed? ○ Yes ☑ No

Applicable Listed Waste Codes:

○ Yes ○ No P Codes: (list) ____________

○ Yes ○ No U Codes: (list) ____________

○ Yes ○ No K Codes: (list) ____________

○ Yes ○ No F Codes: (list) ____________

Applicable Characteristic Codes:

○ Yes ○ No D001: (how determined) ____________ Ignitable

○ Yes ○ No D002: (how determined) ____________ Corrosive

○ Yes ○ No D003: (how determined) ____________ Reactive

○ Yes ○ No Toxic: (list codes) ____________

PCB: Does this waste/sample contain PCBs?

☐ Yes Over 500 ppm

☐ Yes Over 50 ppm

☐ Yes PCBs are suspected

☑ No PCBs are suspected

If YES, what is the source of the PCBs?

☐ Transformer, capacitor, or ballast

☐ Other, specify ____________

☐ Unknown

6. Sample Disposition

☑ Return to Customer

☐ Samples found to contain PCBs will be returned to the customer

☐ Dispose of per facility procedures with applied charges for analyses and disposal

Sample(s) Dose Rate at Contact: [illegible] 105 mrem

HPT Signature: [signature]

7. QC Required ☐ Per 222-S Laboratory Quality Assurance Plan (HNF-SD-CP-QAPP-016)

☑ Other (list reference document or attach) Rad Screen

8. Special Instructions (Special Storage Requirements, Reporting format, holding times, etc.)

This sample is estimated to contain 0.03 grams Pu. 0.81 CES x625 = 506.25

19. Requested Turnaround Time

☐ 2 Weeks ☐ 4 Weeks ☑ Other 48 hrs

20. Sample Received By: [signature] Date: 4-22-99 Time: 1333

21. Chain of Custody

○ No ○ Yes

Number: ____________

REQUEST FOR SAMPLE ANALYSIS (RSA)

Group ID No. (For lab use only)

1. Sample Origin	2. Date Sampled	4. Requestor's Name	6. CACN/COA	7. Cost Center
233-S FACILITY	5/6/99	STEVE J. TRENT	108798	

Customer/Project Code	3. Submitted By	5. Requestor's Phone/MSIN/FAX
Bechtel Hanford Inc.	Doug Bowers	372-9651/H9-03/372-9487

8. Customer ID No.	9. Laboratory Sample No.	10. Volume of Sample	11. Matrix of Sample	12. Requested Analyses	13. Expected Range Pu - Estimate
B0VF98			1/2" dia.	Pipe - See COC	0.065 g
B0VF99			1" dia	Pipe - See COC	0.000106 g
B0VFB0			2" dia	Pipe - See COC	0.000106 g
B0VFB1	S99M000219		liquid	Radscreen only (see COC)	0 g
B0VFB2	S99M000220		liquid	See COC	0.46 g
B0VFB3	S99M000221		liquid	Rad screen only (see COC)	0.46 g
B0VFB4	S99M000222		liquid	Rad screen only (see COC)	0.46 g
B0VFB5	S99M000223		liquid	Rad screen only (See COC)	0.46 g
B0VFB6	S99M000224		liquid	Rad screen only (see COC)	0.46 g

14. Does sample have a MSDS?

◯ Yes HEHF assigned MSDS No. ________

☒ No Description of process that produced waste/sample:

B0VA02

CES ~~values~~

B0VF98	~~0.08~~	B0VFB6	12.3
B0VF99	~~0.01~~	B0VFB3	12.3
B0VFB0	~~0.01~~	B0VFB4	12.3
B0VFB1	0	B0VFB5	12.3
B0VFB2	12.3		

Will radiochemistry results be used for unconditional release? ◯ Yes ☒ No

15. Is this sample RCRA listed? ◯ Yes ☒ No

Applicable Listed Waste Codes:

◯ Yes ◯ No P Codes: (list) ________

◯ Yes ◯ No U Codes: (list) ________

◯ Yes ◯ No K Codes: (list) ________

◯ Yes ◯ No F Codes: (list) ________

Applicable Characteristic Codes:

◯ Yes ◯ No D001: (how determined) ________ Ignitable

◯ Yes ◯ No D002: (how determined) ________ Corrosive

◯ Yes ◯ No D003: (how determined) ________ Reactive

◯ Yes ◯ No Toxic: (list codes) ________

PCB: Does this waste/sample contain PCBs?

☐ Yes Over 500 ppm

☐ Yes Over 50 ppm

☐ Yes PCBs are suspected

☒ No PCBs are suspected

If YES, what is the source of the PCBs?

☐ Transformer, capacitor, or ballast

☐ Other, specify ________

☐ Unknown

16. Sample Disposition

☒ Return to Customer

☐ Samples found to contain PCBs will be returned to the customer

☐ Dispose of per facility procedures with applied charges for analyses and disposal

Sample(s) Dose Rate at Contact: 170 mRem/hr

HPT Signature: [signature]

17. QC Required ☐ Per 222-S Laboratory Quality Assurance Plan (HNF-SD-CP-QAPP-016)

☒ Other (list reference document or attach) 233-S Analytical Instructions/Rad Screen

18. Special Instructions (Special Storage Requirements, Reporting format, holding times, etc.)

See Chains of Custody

LOCKED IN CELL #2

19. Requested Turnaround Time: See 233-S Analytical Instructions

☐ 2 Weeks ☐ 4 Weeks

☒ Other Radscreen - 2 business days

20. Sample Received By: [signature] 5/10/99 Date 1212 Time

21. Chain of Custody ◯ No ☒ Yes

Number: ________

REQUEST FOR SAMPLE ANALYSIS (RSA)

Group ID No. (For lab use only)

1. Sample Origin	2. Date Sampled	4. Requestor's Name	6. CACN/COA	7. Cost Center
233-S Facility	5/6/99	STEVE J. TRENT	108798	

Customer/Project Code	3. Submitted By	5. Requestor's Phone/MSIN/FAX
Bechtel Hanford Inc.	Doug Bowers	372-9651/H9-03/372-9481

8. Customer ID No.	9. Laboratory Sample No.	10. Volume of Sample	11. Matrix of Sample	12. Requested Analyses	13. ~~Expected Range~~ Pu Est.
BØVFB-7 C2	S99M000225		liquid	See COC	0.46g

14. Does sample have a MSDS?

( ) Yes HEHF assigned MSDS No. _____

(✓) No Description of process that produced waste/sample:

CES value
BØVFC2 12.3

Will radiochemistry results be used for unconditional release? ( ) Yes (✓) No

15. Is this sample RCRA listed? ( ) Yes (✓) No

Applicable Listed Waste Codes:

( ) Yes ( ) No P Codes: (list) _____
( ) Yes ( ) No U Codes: (list) _____
( ) Yes ( ) No K Codes: (list) _____
( ) Yes ( ) No F Codes: (list) _____

Applicable Characteristic Codes:

( ) Yes ( ) No D001: (how determined) _____ Ignitable
( ) Yes ( ) No D002: (how determined) _____ Corrosive
( ) Yes ( ) No D003: (how determined) _____ Reactive
( ) Yes ( ) No Toxic: (list codes) _____

PCB: Does this waste/sample contain PCBs?

[ ] Yes Over 500 ppm
[ ] Yes Over 50 ppm
[ ] Yes PCBs are suspected
[✓] No PCBs are suspected

If YES, what is the source of the PCBs?

[ ] Transformer, capacitor, or ballast
[ ] Other, specify _____
[ ] Unknown

16. Sample Disposition

[✓] Return to Customer
[ ] Samples found to contain PCBs will be returned to the customer
[ ] Dispose of per facility procedures with applied charges for analyses and disposal

Sample(s) Dose Rate at Contact: 17 mR/hr

HPT Signature: [signature]

17. QC Required [ ] Per 222-S Laboratory Quality Assurance Plan (HNF-SD-CP-QAPP-016)

[✓] Other (list reference document or attach) 233-S Analytical Instructions / Rad screen

18. Special Instructions (Special Storage Requirements, Reporting format, holding times, etc.)

See chain of custody

LOCKED IN CELL #2

19. Requested Turnaround Time

See 233-S Analytical Inst.

[ ] 2 Weeks [ ] 4 Weeks

[☒] Other Rad screen - 2 ~~hour~~ day

20. Sample Received By:

[signature] 5/10/99 Date 1212 Time

21. Chain of Custody

( ) No (✓) Yes

Number: _____